MEMORANDUM

To: SBNMS Sanctuary Advisory Committee and Working Groups

From: Porter Hoagland, Chair, SBNMS Site Characterization Working Group

Date: 15 September 2003

Re: SBNMS Site Characterization Working Group Minutes: Meeting 1

The Site Characterization Working Group held its first meeting on 5 August 2003 at the Healey Library, University of Massachusetts at Boston. The following individuals were in attendance: Tim Battista (NOAA National Centers for Coastal Ocean Science); Kevin Chu (SAC); John Crawford (Conservation Law Foundation); Susan Farady (Ocean Conservancy; SAC); Porter Hoagland (Woods Hole Oceanographic Institution; SAC); Brian Hooker (NOAA National Marine Fisheries Service); James Lindholm (SBNMS); Ben Haskell (SBNMS); David Lincoln (Massachusetts Fishermen's Partnership); Jason Link (NOAA National Marine Fisheries Service); Michael Thompson (TPMC/Perot Systems); Page Valentine (US Geological Survey); Kate Van Dine (SBNMS); Gordon Waring (NOAA National Marine Fisheries Service); Tony Wilbur (Massachusetts Coastal Zone Management); and David Wiley (SBNMS).

Site characterization is one component of the SBNMS Work Plan. The site characterization issue is described and put in context in the Work Plan. Site characterization is intended to address the needs for (1) a more detailed assessment of resource status and (2) more information on the behavior and habitats of marine mammals in the sanctuary. Site characterization comprises data and analyses that have been generated as a consequence of the 1996 SBNMS Research Plan as well as the efforts of government agencies, user groups, and independent researchers. The purpose of this first meeting was to review existing data sets and analyses pertaining to the sanctuary and to identify sources of additional data.

The participants in the working group also discussed the purposes of site characterization. The compilation and assessment of data for site characterization could be seen as an end in itself. With limited resources, however, it may be more productive for data to be compiled and analyses to be performed in response to proposed management options. This would require specifying management options in advance. In practice there may be a need for some ongoing site characterization activities to occur as management options are being formulated.

Tim Battista of the NOAA National Centers for Coastal Ocean Science (NCCOS) discussed how fisheries data might be analyzed spatially to facilitate the formulation of management options. An arrangement has been made for NCCOS to help the sanctuary staff analyze and interpret biogeographic data, using a GIS presentation format. James Lindholm presented Stellwagen Bank and regional data sets and analyses relating to geology, oceanography, water quality, fishes, and invertebrates. Dave Wiley presented Stellwagen Bank and regional data sets and analyses relating to marine mammals, sea birds, and reptiles. Ben Haskell presented Stellwagen Bank data sets and analyses relating to economics, regulations, and maritime archaeology. These

existing data sets are listed and described briefly in Table 1 (attached). The quality and completeness of these data was discussed by the working group, and some types of analyses using these data were presented. Suggestions for additional sources of data were made; these are listed in Table 2 (attached).

The following were identified as potential data gaps that may need to be filled:

- Fish spawning locations
- Distribution and abundance of juvenile fish
- Quantification of upstream nutrient or pollutant inputs into the sanctuary (*e.g.*, the Merrimack River)
- Distribution of taxa in the sanctuary relative to elsewhere in the Gulf of Maine
- Quality of NMFS VTR data
- Fish life history studies/newly settled juveniles
- Habitat types (including fish behavior across types)
- Historic review of the status of sanctuary
- Data on turtle bycatch in different gears
- Deeper understanding of marine mammal use of sanctuary habitat (species; time spent in the sanctuary; migration windows)
- Transform MARXAN fish data (10 minute square) to the appropriate scale
- Transform phytoplankton data (satellite imagery; chlorophyll A) and data on lobster and crab catches to the appropriate scale

The meeting participants also discussed the nature of the working group's role in supporting the other SBNMS working groups. It was decided that a further meeting of the Site Characterization Working Group should be postponed until the other working groups begin to meet and generate information needs. At that point, the role that the Site Characterization Working Group could play in supporting the efforts of the other working groups should be clarified.

Table 1: SBNMS GIS Spatial Data

FIGURE	MAP	DATA LAYER DESCRIPTION
1	Bathymetry	Bathymetry 15m contours
2	Bathygrid & Hillshade	Bathygrid & hillshade relief
3	Multibeam backscatter	Backscatter multibeam & hillsahde relief
4	Sediment map	Mud, sand, Gravel reclassified grid
5	Sediment & depth	Sediment cross-classified by depth
6	Massachusetts Bay disturbance map	Depositional, erosional, sediment reworking
7	GOMOOS buoy site	Massachusetts bay A0106
8	MWRA stations	Active and historic sites
9	Massachusetts Bay disposal site	Buoys and general area circle
10	Water quality stations	Four water quality sites
11	Beam trawl stations	1995-98 beam trawl stations
12	NMFS juvenile survey	2000 beam trawls
13	SHRMP stations	Multibeam backscatter & P32S/ISIS divestarts
14	Cod movement stations	Acoustic hydrophones
15	Structure forming invertebrates	Sampling methods by site (Jud Crawford)
16	20 year humpback animation	Humpback whales (all quantities)
17	20 year 3D histogram	Humpback whales (all quantities)
18	Track lines	Survey track lines
19	Right whales consortium	Sightings from all years
20	Shipping tracks	Mandatory ship reporting system (July 1999-Jone 2000)
21	Baleen whales	Yearly comparisons 1994/95 & 2001/02
22	Fixed gear	Yearly comparisons 1994/95 & 2001/02
23	Mobile vessels	Yearly comparisons 1994/95 & 2001/02
24	Closures	Fishing regulation closures
25	Wreck database	Targets over bathymetry

Table 2: Suggested Additional Site Characterization Data

DATA TYPE	SUGGESTED BY	POTENTIAL CONTACT
GEOLOGICAL DATA		
Seismic data from oil and natural gas exploration	Dave Lincoln	USGS (may have paper map); also look in Georges Bank Book
Multibeam sonar surveys on western side of Stellwagen Bank	Tony Wilbur	CZM; NOS; USGS (fieldwork to begin in Fall 2003)
Jeffreys Ledge backscatter mapping	Page Valentine	Larry Meyer (UNH/NOAA Mapping Consortium)
Terrain ruggedness index	Page Valentine	Page Valentine (available Fall 2003)
NMFS "hang" database	Jason Link	Jason Link (already sent to SBNMS)
Sediment samples (heavy metals, etc.) [GWFA/NE consort work]	Dave Lincoln	Dave Lincoln; ACoE
Mass Bay/nearshore bathymetry	Tony Wilbur	Tony Wilbur/USGS
Disposal site monitoring data (sediment profile imagery, benthic grabs)	Tony Wilbur	Tom Fredette (ACOE); EPA
HazMat transport data		
USGS dumpsite map	Page Valentine	Page Valentine
Aeromagnetic/gravity data (related to nuclear power plant siting)	Dave Lincoln	
FISHERIES DATA		
Data on fish spawning sites	Various	?
Fishermens' oral history	Dave Lincoln	MIT / Madeleine Hall Arbor
NMFS plankton and shrimp surveys	Jason Link	Joan Palmer (NMFS)
Recreational fishing data	Various	NMFS
Large pelagic fish data (tuna landings and values)		Mark Murray-Brown
Pelagic organisms	John Crawford	Larry Madin (WHOI)
EFH Technical Team VTR data (pre- Western Gulf of Maine closure)		NMFS (for comparison with 1995 and 2002 usage study)
Long- and short-term fisheries studies		Massachusetts DMF
Jellyfish–hydroid data		Larry Madin (WHOI)
OCEANOGRAPHIC DATA		
NMFS Temperature and salinity maps; thermocline	Dave Lincoln/Jason Link	Dave Mountain (NMFS)
SeaWifs Data	Dave Lincoln	
Water temperature data	Tony Wilbur	Mass DMF
Physical oceanographic data	Various	Allan Robinson (Harvard) Li (University of Maine) GOMOOS GLOBEC Lynch (Dartmouth) Chris Clark (Cornell)
MWRA outfall modeling		
SHIPPING		
NEIT port economics study		Hauke Kite-Powell (WHOI)
Cruise ship data		MassPort